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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,365	06/23/2005	Hiroshi Morikawa	2950-051771	3495
28289 7590 12/15/2008 THE WEBB LAW FIRM, P.C. 700 KOPPERS BUILDING 436 SEVENTH AVENUE PITTSBURGH, PA 15219				
EXAMINER				
YEE, DEBORAH				
ART UNIT		PAPER NUMBER		
1793				
MAIL DATE		DELIVERY MODE		
12/15/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/540,365

**Applicant(s)**

MORIKAWA ET AL.

**Examiner**

Deborah Yee

**Art Unit**

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 October 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 4-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 4 to 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over the English translation of Japanese patent 02270942 ("JP-942") for the reasons set forth in the previous office actions dated December 3, 2007 and May 9, 2007.
3. Claims 4 to 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over the English translation of Japanese patent 2001-254153 ("JP-153") for the reasons set forth in the previous office action dated April 11, 2008.

***Response to Arguments***

4. Applicant's arguments filed October 10, 2008 have been fully considered but they are not persuasive.

***Japanese patent 402270942 ("JP-942")***

5. JP-942 teaches a ferritic stainless steel alloy having a composition with constituents whose wt% ranges overlap those recited by the claims except contains 14-26% Cr whereas present invention recites 10-12.6%. Applicant argued that there is no motivation or rationale for why one of ordinary skill in the art would lower Cr content from 14-26% to 10-12.6%.

6. It is the Examiner's position that it is a well known metallurgical concept as taught by both JP-942 and present invention that adding Cr to ferritic stainless steel improves corrosion resistance but too much can compromise processability. See JP-942 on page 16 teaches adding 14-46% Cr to greatly improved corrosion resistant; and if less than 14% is added, corrosion resistant effect is insufficient and if over 26%, processability deteriorate. Similarly, Applicant on page 6 of instant specification teaches Cr as an essential element for improvement of corrosion resistance with an amount of 10% or more but excess above 20% degrades toughness (processability), therefore a range of 11-18% is preferred. Therefore depending on steel application, it would be a matter of choice and routine optimization well within the skill of the artisan to adjust Cr content in accordance with the desired corrosion resistant and toughness level sought which produces no more than the known and expected effect from such a modification.

7. Applicant argued that JP-942 is directed to a high-purity and high-cleanliness stainless steel wherein oxide-type and sulfide-type inclusions are reduced by lowering the S content and by adding specific amounts of Al or Ti. In contrast present invention recites a work-hardened ferritic structure, wherein bendability of steel is improved by controlling type and distribution of inclusions such that at least one of  $Al_2O_3$  and  $Al_2O_3$ -MgO inclusions of 10  $\mu m$  or less in size are distributed with an index of cleanliness of 0.06% or less.

8. It is the examiner's position that present invention does not patentably differ from JP-942 because similar to Applicant, JP-942 on pages 13 and 17 to 20 is also concerned with producing a steel having excellent bendability which is achieved in essentially the same manner by regulating oxide inclusions distributed within an index of cleanliness of 0.02% or less. Although prior art does not specifically teach at least one of  $\text{Al}_2\text{O}_3$  and  $\text{Al}_2\text{O}_3$ -MgO inclusions of 10  $\mu\text{m}$  or less in size as recited by the claims, such property would be expected since composition and process of making are closely met and in absence of proof to the contrary. Note specific ferritic stainless steel example 8 on pages 21-23 closely meets composition, and is processed by deoxidizing with 0.022% Al (within claimed Al range of 0.001 to 0.05%) to achieve cleanliness index of 0.016 (within claimed range of 0.06% or less), and is then subjected to hot rolling, annealing and 30% cold rolling to work hardened ferritic structure to achieve good bendability for tight bending in c - direction without cracking.

***Japanese patent 2001-254153 ("JP-153")***

9. Applicant argued that JP-153 is directed to an annealed stainless steel sheet and not a work-hardened stainless steel as specifically recited in the claims. Contrary to Applicant's argument, JP-153 does teach a work-hardened stainless steel, see paragraph [0027] wherein steel is manufactured by hot rolling, annealing and cold rolling to form ingot into steel plate in the same manner as disclosed on page 8 of Applicant's specification.

10. Applicant further argued that JP-153 steel contains P, N and Ti which would be excluded by "consisting of" limitation recited in claims. This argument is not persuasive

because Ti is taught as optional, as evident by English abstract which states "one or two kinds of 0.01 to 0.8% Ti and 0.005 to 0.2% Al" can be added. Also JP-153 teaches <0.04%P which has a lower limit of zero; and paragraph [0013] teaches P as an inevitable impurity kept as low as possible but a minimum of 0.005% is desired from the stand point of economical consideration because removal is costly. Similarly, in paragraph [0006] of JP-153, the presence of N is undesirable because it reduces processability and machinability and is preferred to be kept at 0.0005 to 0.015%. A lower limit of 0.0005% is only desirable from the stand point of cost because removal is costly. Base on prior art teaching, P and N are at impurity levels, and therefore within Applicant's claimed limitation of "inevitable impurities" which would not be excluded by "consisting of".

### ***Conclusion***

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on monday-friday 6:00 am-2:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Deborah Yee/  
Primary Examiner, Art Unit 1793

/DY/